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EXAMINER

HUSON, MONICA ANNE

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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/687,498
Filing Date: March 25, 2004
Appellant(s): WANG ET AL.

Allen Hoover
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 25 February 2008 appealing from the Office action mailed 23 April 2008.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The following are the related appeals, interferences, and judicial proceedings known to the examiner which may be related to, directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal:

U.S. Patent Application 09/863928

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

4076846	Nakatsuka et al.	02-1978
5849233	Altieri et al.	12-1998
5455342	Redding, Jr.	10-1995

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakatsuka et al. (U.S. Patent 4,076,846), in view of Altieri (U.S. Patent 5,849,233). Regarding Claim 1, Nakatsuka et al., hereafter "Nakatsuka," show that it is known to carry out a method for preparing a film (Abstract), the process comprising providing a hydroxyalkyl starch, said starch being derivatized with a hydroxyalkyl substituent having from 2 to 6 carbon atoms (Column 6, lines 60-62); and extruding said starch in an extruder (Column 6, lines 30-32), said extruder having a barrel, a die, and at least one rotating shaft (Column 9, lines 35-43), said barrel having at least first and second zones, said first zone being upstream from said second zone (Column 13, lines 34-37), the temperature in the first zone being insufficient to gelatinize said starch to a gelatinization level of at least 95% (Column 13, lines 34-36; It is noted that gelatinization occurs about 150C-175C.) and the temperature in said second zone being sufficient to gelatinize said starch to a gelatinization level of at least 95% (Column 13, lines 36-37; It is noted that gelatinization occurs about 150C-175C.), said starch being extruded in the presence of controlled moisture, said process including the step of controlling the rotational speed of said shaft to impart specific mechanical energy to said starch sufficient to result in a soluble extruded starch product that is capable of extrusion through said die at said rotational speed (Column 12, lines 44-60; Column 14, lines 37-45), said solution having been prepared by mixing said starch product with water (Column 12, lines 20-24); and forming a film from said solution (Column 4, lines 5-13). Nakatsuka does not specifically show barrel moisture levels. Altieri shows that it is known to carry out a method wherein the moisture in the barrel does not exceed 25% by weight of said starch (Column 1, lines 56-58). Altieri and Nakatsuka are combinable because they are concerned with a similar technical field, namely, methods of molding starches. It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to use Altieri's specific barrel moisture teachings during Nakatsuka's molding process in order to most accurately form a product that accommodates exclusive end-use specifications.

Regarding Claim 2, Nakatsuka shows the process as claimed as discussed in the rejection of Claim 1 above, but he does not give barrel moisture levels. Altieri shows that it is known to carry out a method wherein the moisture in the barrel does not exceed 25% by weight of said starch (Column 1, lines 56-58). It is noted that a prior art reference that discloses a range encompassing a somewhat narrower claimed range is sufficient to establish a prima facie case of obviousness (MPEP 2144.05; *In re Peterson*, 315 F.3d 1325, 1330, 65 USPQ2d 1379, 1382-83 (Fed. Cir.2003). It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to operate Nakatsuka's molding method under a somewhat narrower moisture range of less than 22.5% by weight of the starch, suggested by Altieri, in order to most accurately form a product that accommodates exclusive end-use specifications.

Regarding Claim 3, Nakatsuka shows the process as claimed as discussed in the rejection of Claim 1 above, but he does not give barrel moisture levels. Altieri shows that it is known to carry out a method wherein the moisture in the barrel does not exceed 25% by weight of said starch (Column 1, lines 56-58). It is noted that a prior art reference that discloses a range encompassing a somewhat narrower claimed range is sufficient to establish a prima facie case of obviousness (MPEP 2144.05; *In re Peterson*, 315 F.3d 1325, 1330, 65 USPQ2d 1379, 1382-83 (Fed. Cir.2003). It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to operate Nakatsuka's molding method under a somewhat narrower moisture range of less than 20% by weight of the starch, suggested by Altieri, in order to most accurately form a product that accommodates exclusive end-use specifications.

Regarding Claim 4, Nakatsuka shows the process as claimed as discussed in the rejection of Claim 1 above, but he does not give barrel moisture levels. Altieri shows that it is known to carry out a method wherein the moisture in the barrel does not exceed 25% by weight of said starch (Column 1, lines 56-58). It is noted that a prior art reference that discloses a range encompassing a somewhat narrower claimed range is sufficient to establish a prima facie case of obviousness (MPEP 2144.05; *In re Peterson*, 315 F.3d 1325, 1330, 65 USPQ2d 1379, 1382-83 (Fed. Cir.2003). It would have been prima facie obvious to one of ordinary skill in the art at the time the invention

was made to operate Nakatsuka's molding method under a somewhat narrower moisture range of less than 17.5% by weight of the starch, suggested by Altieri, in order to most accurately form a product that accommodates exclusive end-use specifications.

Regarding Claim 5, Nakatsuka shows the process as claimed as discussed in the rejection of Claim 1 above, including a method wherein the solution includes a plasticizer (Abstract), meeting applicant's claim.

Regarding Claim 6, Nakatsuka shows the process as claimed as discussed in the rejection of Claim 1 above, including a film formed by the said process (Column 4, lines 5-13), meeting applicant's claim.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nakatsuka and Altieri, in view of Redding, Jr. (U.S. Patent 5,455,342). Nakatsuka shows the process as claimed as discussed in the rejection of Claim 1 above, but he does not show the particle size of his common starch. Redding, Jr. shows that it is known to carry out a method of molding starches wherein the starches have a particle size distribution such that at least 90% by weight of the starch particles pass through an 80 mesh (180 micron) screen (Column 1, lines 19-23; It is being interpreted that since starch is "commonly found" at sizes from 5-25 microns, at least 90% by weight of starch would fall into the disclosed size of 5-25 microns.). Redding, Jr. and Nakatsuka are combinable because they are concerned with a similar technical field, namely, methods of molding starches. It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to identify the size disclosed in Redding, Jr. as that of Nakatsuka's "common" starches in order to design molding processes that would accommodate specifically-sized granules.

(10) Response to Argument

(Rejection 1)

(1) Appellant contends that Nakatsuka does not suggest the instant invention because Nakatsuka only shows starch starting materials and not starch materials after extrusion or an extruded starch product. This is not persuasive because although Nakatsuka does not specifically identify the exact composition of the final article, an

"extruded starch product" is easily defined as a product made of extruded starch. Therefore, since Nakatsuka does extrude a starch material, his product clearly satisfies the claimed "extruded starch product". It is further noted that Nakatsuka's disclosure that his end product is not a simple mixture and may include a protein does not teach away from the claimed process; other ingredients or compositions of the extruded product are not excluded by the current claim.

(2) Appellant contends that Nakatsuka does not disclose the claimed extrusion conditions because Nakatsuka refers to gelatinization of the starch in the starting materials, not upon extrusion. This is not persuasive because, as noted in the Final Office Action, Nakatsuka clearly discloses an extruder barrel having at least two zones at Column 13, lines 34-37. Also as previously noted, gelatinization occurs at about 150C-175C, so it is being interpreted that the cooler first zone would be insufficient to gelatinize the molding material, while the subsequent second/third zone would be sufficient for gelatinization. Note that it is being interpreted that since Nakatsuka does disclose that gelatinization is effected via his process (Column 6, lines 14-19), 100% gelatinization occurs while or after the molding material is in the second/third zone. Finally, the passage at Column 6, lines 14-19 clearly describes gelatinization "during the course of manufacturing the molding compositions as well as the molded articles". It is maintained that Nakatsuka clearly suggests gelatinization occurring during his extrusion process.

(3) Appellant contends that Nakatsuka does not disclose forming a film from a solution. This is not persuasive because Nakatsuka clearly describes forming a film at Column 4, lines 5-10.

(4) Appellant contends that Nakatsuka and Altieri do not suggest the instant invention because Altieri does not remedy the alleged defects of Nakatsuka. This is not persuasive, as the alleged defects are not persuasive as discussed above.

(Rejection 2)

(1) Appellant contends that Nakatsuka and Redding, Jr. are incompatible. This is not persuasive because, as noted in the Final Office Action, the examiner maintains

her interpretation that Nakatsuka produces a starch article (whether or not it is a protein-starch combination), in particular because Nakatsuka claims a molded article comprising a starch material in claim 20. Further, although Nakatsuka combines a starch material with a protein material, the examiner does not agree with applicant that Nakatsuka's starch is heavily-modified (i.e. chemically modified). In fact, Nakatsuka, like Redding, also teaches that chemical modification of a starch material is undesirable (See Nakatsuka, Column 2, lines 31-33). Therefore, it is maintained that the disclosures of Nakatsuka and Redding would be properly combinable to suggest the instant invention.

(2) Appellant contends that Nakatsuka and Redding teach away from hydroxyalkyl starches. It is firstly noted that the Final Office action did not agree or recognize that Nakatsuka teaches away from hydroxyalkyl starches. The examiner maintains that Nakatsuka does suggest using hydroxyalkyl starch components as disclosed in Column 6, lines 60-64. Redding, Jr. was not cited to show hydroxyalkyl starch components.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Monica A Huson/

Primary Examiner, Art Unit 1791

Conferees:

/Steven P. Griffin/

Supervisory Patent Examiner, Art Unit 1791

/Christina Johnson/

Supervisory Patent Examiner, Art Unit 1791

